

CLAIMS:

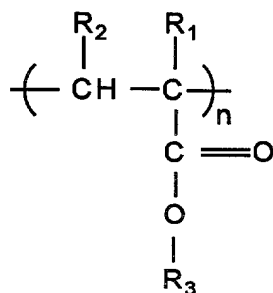
1. A method for removing gross soils from a substrate during a multi-step cleaning process comprising the step of flushing the substrate with a pre-rinse solution prior to application of said cleaning solution, said pre-rinse solution comprising water and a partially neutralized anionic polymer.

2. The method of Claim 1 wherein said partially neutralized anionic polymer is selected from polyacrylates, polymethacrylates, polysulfonates, polyphosphates, polyphosphonates, phosphino polycarboxylates, polyaspartates, polycarboxylated alcohol alkoxylates, copolymers thereof, and mixtures thereof.

3. The method of Claim 1 wherein said pre-rinse comprises from about 5 to about 5000 ppm of said partially neutralized anionic polymer.

4. The method of Claim 1 wherein said pre-rinse further comprises a co-builder which is ethylenediaminetetraacetic acid, diethylenetriaminepentaacetic acid, hydroxyethylethylenediaminetetraacetic acid, aminotri(methylenephosphonic acid), 2-phosphonobutane-1,2,4-tricarboxylic acid, diethylenetriaminepenta(methylenephosphonic acid), and mixtures thereof.

5. The method of Claim 1 wherein said partially neutralized anionic polymer is a polyacrylate comprising from about 10% to about 90% by weight of a substituted acrylic monomer or salt thereof having the general formula



where R_1 or R_2 are independently hydrogen or a C_1 to C_4 alkyl or hydroxyalkyl, and R_3 is hydrogen or an alkali metal salt.

5 6. The method of Claim 1 wherein said pH of said pre-rinse solution is about 4 to about 11.

7. The method of Claim 1 wherein said pH of said pre-rinse solution is about 5 to about 10.

10 8. The method of Claim 1 wherein said multi-step cleaning process is selected from laundry washing, dishwashing, warewashing, hard surface cleaning, clean-in-place and clean-out-of-place.

15 9. The method of Claim 7 wherein said multi-step cleaning process is a clean-in-place cleaning of heat transfer equipment surfaces or a clean-out-of-place cleaning of heat transfer equipment surfaces.

20 10. The method of Claim 1 further comprising the step of flushing the substrate with at least one other rinse solution.

11. The method of Claim 10 wherein said rinse solution is acidic, caustic or neutral.

25 12. The method of Claim 1 further comprising the step of cleaning said substrate with a main wash solution which is an enzymatic solution, a caustic solution, an acidic solution, a neutral solution, or mixture thereof.

13. The method of Claim 1 wherein said substrate is metallic, polymeric or glass.

30 14. The method of Claim 13 wherein said substrate is stainless steel, copper, brass, aluminum, plastic or glass.

15. The method of Claim 1 wherein said substrate is a hard surface.
16. The method of Claim 15 wherein said hard surface is a surface that comes into contact with food.
- 5 17. The method of Claim 15 wherein said hard surface is a pipeline, tank, or silo.
18. The method of Claim 1 wherein said substrate is a porous surface.
- 10 19. The method of Claim 18 wherein said porous surface is a textile or membrane filter.
20. The method of Claim 1 wherein said gross soil comprises whey, whey fractions, milk, milk fractions, or other milk product.
- 15 21. A multi-step method for cleaning hard surfaces comprising the steps of:
- a) flushing with a pre-rinse solution said pre-rinse solution comprising water and a partially neutralized anionic polymer; and
- b) further comprising at least one other step which is either
- 20 flushing with at least one other rinse solution said rinse solution being either acidic, caustic or neutral, or cleaning with a main wash solution, or both.
22. The method of Claim 21 wherein said partially neutralized anionic polymer is
- 25 selected from polyacrylates, polymethacrylates, polysulfonates, polyphosphates, polyphosphonates, phosphino polycarboxylates, polyaspartates, polycarboxylated alcohol alkoxylates, copolymers thereof, and mixtures thereof;
23. The method of Claim 21 wherein said main wash solution is an enzymatic wash
- 30 solution, a caustic wash solution, an acidic wash solution or a neutral wash solution.

24. The method of Claim 21 wherein said pre-rinse comprises from about 25 to about 10000 ppm of said partially neutralized anionic polymer.
25. The method of Claim 21 wherein said pH of said pre-rinse solution is about 4 to about 11.
26. The method of Claim 21 wherein said pre-rinse solution removes gross soils.
27. The method of Claim 26 wherein said gross soil comprises whey, whey fractions, milk, milk fractions, or milk products.